UPPER GASTROINTESTINAL TRACT BLEEDING: A STUDY FROM THE DOD CIVILIAN EXTERNAL PEER REVIEW PROGRAM

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Upper gastrointestinal tract bleeding (UGIB) is a significant cause of morbidity. The mortality rate for UGIB has remained at about 10 percent over the past 40 years despite significant developments in diagnosis, treatment, and monitoring. Approximately 150 episodes of UGIB per 100,000 people occur every year, and 300,000 patients are hospitalized annually for the condition.[1,2]

At the request of the Navy Service Consultant in Critical Care Medicine, the Civilian External Peer Review Program (CEPRP) of the Department of Defense recently completed a study to determine the extent and pattern of UGIB within the military health care system.[3] The contractor for CEPRP worked closely with the Service Consultants in Critical Care and Gastrointestinal Medicine to assure that this study would support quality management and accreditation initiatives at all levels of command.

Data on 3,294 patients with a diagnosis of UGIB that were discharged between October 1990 and September 1991 from 139 military medical treatment facilities (MTFs) were analyzed. The study examined the demographics of the patient population, mortality rate, endoscopic and surgical therapy, return to critical care units, rebleeding, blood utilization, emergency department waiting times before inpatient admission, and repeat use of diagnostic or therapeutic procedures.

FINDINGS

Table 1 displays the distribution of cases in the CEPRP study by beneficiary status. There were 2,257 cases involving males and 1,037 involving females. The predominant age range was from 60 to 75 years. Fifty percent of the study population were males not on active duty.

Incidence of Mortality

The worldwide mortality rate from UGIB over the past 40 years is about ten percent.[4,5] In the CEPRP study, the rate was seven percent, with 160 of the 231 deaths (69 percent) occurring in male patients. Six of the patients (three percent) who died were active duty and 143 (62 percent) were retired military patients. The distribution of death cases by beneficiary status is reported at Table 2.

Of the patients who died, 60 (27 percent) did so from end-stage liver disease usually associated with chronic alcohol abuse, 41 (18 percent) from benign ulcers, gastritis, and gastrointestinal hemorrhage, 16 (7 percent) from cancer of the GI tract, 36 (16 percent) from other cancer, and 72 (32 percent)

BENEFICIARY STATUS - UGIB

	NUMBER	PERCENT
Retired Military	1433	43.5
Dependent, Retired	724	22.0
Active Duty	703	21.3
Dependent, Active Duty	301	9.1
Other Veterans	24	3.8
Unknown	9	0.3
TOTAL	3294	100

TABLE 1

BENEFICIARY STATUS - DEATH

	NUMBER	PERCENT
Retired Military	143	61.9
Dependent, Retired	64	27.7
Other Veterans	11	4.8
Active Duty	6	2.6
Dependent, Active Duty	6	2.6
Unknown	1	0.4
TOTAL	231	100

TABLE 2

from various other reasons. Large facilities, those with more than 3,600 annual patient discharges and classified as medical centers, experienced a mortality rate of 11 percent. Their rate was significantly higher than that at medium (more than 3,600 discharges but not classified as medical centers) and small facilities (less than 3,600 discharges), five and three percent, respectively. This finding may reflect a greater proportion of more severely ill patients treated in the larger facilities.

Use of Endoscopy

The current management of UGIB emphasizes early endoscopic diagnosis, with an overall accuracy rate of more than 90 percent, and local endoscopic therapy for patients at high risk for persistent or recurrent bleeding and death from UGIB.[2] Early endoscopy may lower morbidity rates during the 10 days following UGIB.[6]

Of 2,225 patients in the National Survey on Upper Gastrointestinal Bleeding conducted by the American Society for Gastrointestinal Endoscopy (ASGE), 2,094 (94 percent) were treated or diagnosed with endoscopy.[1] In the CEPRP study, endoscopic diagnosis was used in 2,261 (69 percent) cases, and endoscopic therapy was used in 416 (13 percent). Large MTFs used endoscopic techniques approximately twice as often as small MTFs.

Three hundred fifty-four (11 percent) cases required repeat endoscopy (Table 3). This was performed in one hundred eighty three (52 percent) to reevaluate the source of bleeding, 75 were done to treat bleeding, 65 to clarify an inadequate initial diagnosis, 24 to biopsy and 6 for other reasons. Large facilities had a significantly higher number of cases with re-endoscopies than medium facilities, and medium facilities showed a significantly higher number of re-endoscopy cases than small facilities. The relationship between the rate of re-endoscopy and morbidity or mortality was not examined.

REASON FOR RE-ENDOSCOPY

	NUMBER	PERCENT
Reevaluate Bleeding Source	183	51.8
Treatment	75	21.2
Inadequate Diagnosis	65	18.4
Biopsy	24	6.8
Unrelated to UGIB	4	1.1
Endoscopy Other Location	2	0.6
TOTAL	354	100

TABLE 3

Emergency Surgery or Other Surgery

Complications prompted surgery in approximately 12 percent of the UGIB cases in the ASGE study. In the CEPRP study, 146 (four percent) of the patients underwent GI surgery during their hospitalization. A significantly higher proportion of cases in large facilities underwent surgery than cases in small and medium facilities. Of 146 patients undergoing surgery, 57 entered the ICU and 32 died.

Critical Care Readmissions

One hundred sixty-five (5 percent) patients in the CEPRP study were readmitted to the ICU or CCU during their hospitalization. Large facilities had a significantly higher number of returns than both the small and medium facilities. Approximately half were returned for episodes of re-bleeding. Additional reasons for

readmission were general observation, postoperative care, unstable occult bleeding, co-morbid diseases and cardiovascular complications.

Emergency Department Waiting Times

In the CEPRP study, 2,416 (73 percent) cases were admitted through the emergency department (ED). Seventy-nine of the 139 MTFs were surveyed, and 536 cases with an ED waiting time greater than four hours from presentation in the ED until impatient admission were analyzed.

A statistically significant relationship was found between an ED waiting time over four hours and a syncopal or hypotensive episode. Roughly half of the patients waiting more than four hours required blood transfusions; approximately five percent received more than ten units. Thirty-two experienced re-bleeding episodes, 439 were endoscoped, 24 underwent GI surgery, and 34 died. The 34 patients who died represent one percent of all cases and 15 percent of all deaths. Interestingly, no significant relationship was found between an ED waiting time over four hours and death or the occurrence of surgery.

Blood Utilization

In the ASGE study, 75 percent of patients received blood transfusions. Of these, 12 percent received ten or more units. In the CEPRP study, 47 percent of all patients and 81 percent of those who died received transfusions. Of the patients who received transfusions and died, 65 percent received five or more units and 37 percent received ten or more units. Large facilities had a statistically significant higher proportion of cases transfused with ten or more units. They also experienced a statistically significant higher number of deaths in this category when compared with either medium or small facilities. Again, this may reflect a greater proportion of severely ill patients treated at large MTFs.

CONCLUSIONS AND RECOMMENDATIONS

Of the 231 patients who died, 143 were males between 60 and 75 years of age. Sixty patients died from end-stage liver disease usually associated with chronic alcohol abuse. The study recommended implementing additional education and prevention programs to detect and treat alcoholism.

Eleven percent of the patients underwent repeat endoscopy. Large training facilities had a significantly higher number of cases requiring re-endoscopy than smaller facilities. The study recommended that hospitals teaching endoscopy develop practice guidelines regarding appropriate indications for re-endoscopy, and review cases in which re-endoscopy was performed.

The management of UGIB patients becomes more difficult when complications, such as continued bleeding or the need for emergency surgery, arise. Since most UGIB patients present through the ED, high-risk patients must be identified early to effect the best clinical outcome. The CEPRP study concluded that physicians practicing in the ED should be trained to strongly suspect occult UGIB in patients who present with syncope as the major complaint. In addition, hospitals with EDs where waiting times were longer than four hours should review their protocols for triage and transport.

The CEPRP study also recommended that blood products utilization review be ongoing and specifically include blood transfused to UGIB patients. Finally, hospitals should evaluate their handling of UGIB and educate their medical staff about the appropriate procedures for treating this condition.

After the study was reported, one large MTF created a team to assess its management of UGIB cases. The MTF subsequently changed its practice guidelines and significantly improved the clinical outcomes of its UGIB patients. Details on the manner in which the study was used by this MTF are available from Captain Dennis Amundson, Medical Corps, United States Navy, Department of Medicine, Naval Medical Center, San Diego, CA 92134.

Further information about the CEPRP study is available from Dr. Raymond S. Crawford, Forensic Medical Advisory Services, 11300 Rockville Pike, Rockville, MD 20852.

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